

**FINAL DRAFT CLEANUP ACTION PLAN  
ABLE PEST CONTROL SITE  
18115 62<sup>ND</sup> AVENUE NE  
KENMORE, WASHINGTON**

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## 1.0 INTRODUCTION

Farallon Consulting LLC (Farallon) has prepared this Final Draft Cleanup Action Plan (CAP) for the cleanup of pesticides in soil and perched groundwater in the vadose zone at the Able Pest Control Site located at 18115 62<sup>nd</sup> Avenue NE in Kenmore, Washington (herein referred to as the site, Figure 1). The site is defined as the area where concentrations of pesticides were detected above the applicable cleanup levels in soil and includes all of the property located at 18115 62<sup>nd</sup> Avenue NE (62<sup>nd</sup> Avenue Property), a portion of the storm water drainage ditch located on the east side of the 62<sup>nd</sup> Avenue Property, the northwest portion of the property located adjacent – south of the 62<sup>nd</sup> Avenue property at 6124 NE 181<sup>st</sup> Street (Preschool Property), and a small portion of the adjacent-north property in Kenmore Washington (Figure 2).

### 1.1 PURPOSE

This CAP has been developed in accordance with the Washington State Department of Ecology (Ecology) *Model Toxics Control Act Cleanup Regulation* (MTCA), Chapter 173-340 of the Washington Administrative Code (WAC). In accordance with WAC 173-340-360(2), the selected cleanup action presented in the RI/FS will meet the applicable cleanup levels at the defined points of compliance, protect human health and the environment, comply with applicable state and federal laws, and provide for compliance monitoring.

This CAP provides specific detail for the implementation of Alternative No. 5: Soil Excavation and Off-Site Disposal at an Approved Landfill and/or Incineration which includes excavation and off-site disposal of soil with concentrations of one or more of the target pesticides above the applicable cleanup levels, as well as monitoring for concentrations of pesticides in perched groundwater in the vadose zone after completion of the soil removal.

This alternative was presented in the RI/FS which was conducted under the Ecology Voluntary Cleanup Program (VCP). The RI/FS was reviewed by Ecology in January 2000. Ecology has confirmed that the RI/FS adequately characterizes the site and provides sufficient information for selection of a cleanup alternative. The site cleanup will be conducted under an Agreed Order No. OOTC PNR – 1151 (Agreed Order) with Ecology to meet the requirements of the Agreed Order for removing the site from the Hazardous Site List in accordance with WAC 173-340-330 (4).

### 1.2 CLEANUP ACTION PLAN ORGANIZATION

Combined within this CAP, either directly or by reference, are the following three documents which have been developed for proceeding with soil cleanup at the site: (1) Engineering Design Report (WAC 173-340-400[4][a]), (2) Sampling and Analysis Plan (WAC 173-340-820) and Compliance Monitoring Plans (WAC 173-340-410) (combined), and (3) Safety and Health Plan (WAC 173-340-810). These documents have been combined into one comprehensive CAP to minimize duplication of effort and to expedite the cleanup action.

The CAP has been organized into the following sections:

- **Section 2.0 - Background:** Section 2.0 provides a description of the site, background, and a summary of previous work conducted at the site. The previous work included the site location and description, geologic and hydrogeologic setting, a summary of previous subsurface assessment investigations, and RI/FS activities.
- **Section 3.0 – Technical Elements:** Section 3.0 provides a summary of the technical elements for the CAP, including a discussion of the applicable or relevant and appropriate requirements (ARARs), constituents and media of concern, applicable cleanup levels, and points of compliance.
- **Section 4.0 – Design and Implement:** Section 4.0 describes the components of the cleanup action consistent with the requirements of the Engineering Design Report.
- **Section 5.0 – Confirmation Sampling:** Section 5.0 references compliance sampling requirements provided in the SAP.
- **Section 6.0 – Schedule:** Section 6.0 provides a preliminary construction schedule.
- **Section 7.0 – Documentation Requirements:** Section 7.0 summarizes the documentation to be provided.
- **Section 8.0 – References:** Section 9.0 lists the references cited in this CAP.

## 2.0 BACKGROUND

This section provides a brief summary of previous work completed at the site. A more detailed summary of the results of previous site investigations is provided in the RI/FS report. A list of references is included in Section 9.0 of this CAP.

### 2.1 SITE LOCATION AND DESCRIPTION

The entire site consists of a residential lot located at 18115 62<sup>nd</sup> Avenue Northeast, the northwest portion of the Preschool Property located at 6124 NE 181<sup>st</sup> Street and a small portion of the property adjacent and north of the 62<sup>nd</sup> Avenue Property in Kenmore, Washington (Figure 1 and 2). The portion of the site addressed by this CAP is the area where soil contains concentrations of one or more of the target pesticides above the applicable cleanup levels. This includes the 62<sup>nd</sup> Avenue Property and a small portion of the north-adjacent property (referred to as the site in this CAP). As discussed below, interim actions conducted at the Preschool Property have cleaned up the soils in this portion of the site.

The site is located approximately 1,200 feet from the northern end of Lake Washington and is currently zoned for residential use by the city of Kenmore. Land use surrounding the site includes single-family residences to the northwest and east; a vacant, vegetated lot to the north; a multi-unit condominium building to the west-southwest; and a preschool to the south (Figure 2). Residences in the vicinity of the site are connected to the municipal water supply and the sewer discharges to King County Department of Natural Resources, Industrial Waste Program. The future land use of the immediate site area is projected to remain single family or multi-unit residential.

The legal description for the 62<sup>nd</sup> Avenue Property is:

The portion of Government Lot 3, Section 11, Township 26 North, Range 4 East W.M., in King County, Washington, described as follows:

Beginning at the north quarter corner of said Section,  
 Thence south 2° 41' 16" W along the centerline of said Section, a distance of 1000.151 feet;  
 Thence west 30.03 feet to the true point of beginning;  
 Thence west 152.705 feet;  
 Thence south 99.33 feet;  
 Thence north 87° 14' 47" E to a point from which the true point of beginning bears north 2° 41' 16" E;  
 Thence north 2° 41' 16" E to the true point of beginning;  
 (Being known as Lot 2, Block 8, Waverly Park, according to the unrecorded plat thereof, except the southerly 85.00 feet, as measured along the west line thereof, and Lot 3 in said block, except the northerly 65.00 feet as measured along the west line thereof).

The 62<sup>nd</sup> Avenue Property is currently developed with a residential home with ground level and second-floor living units and a separate two-car, dirt-floor garage. The floor of the ground-level

apartment is a concrete slab approximately two to three feet below the outside grade. A gravel driveway is located along the northern portion of the 62<sup>nd</sup> Avenue Property. Lawn, shrubs, or other vegetation covers the remaining areas of the site.

## **2.2 HISTORIC USE**

Mr. Sheridan Martin owned the 62nd Avenue Property between 1969 and 1986 and operated a pest control company called Able Pest Control, Inc. from the residence. In late 1985, Mr. Martin sold Able Pest Control, Inc. to Mr. Tom E. Reed and Mr. James W. Nation. Mr. Reed and Mr. Nation formed a corporation named Able Pest Control, Inc. This corporation operated at the 62nd Avenue Property between November 1985 and January 1986. Operations at the 62nd Avenue Property conducted by both corporations involved storing and dispensing pesticides for off-site use. The pesticides were stored and dispensed in an area underneath the back porch located at the southwestern corner of the building.

The 62nd Avenue Property was sold to Ms. Schlittenhard on November 14, 1986. Ms. Schlittenhard converted the residence into two apartments, one on the ground-floor level and the other on the upper level of the residence. In 1994, during expansion of the ground-floor apartment, soil was excavated from the former pesticide storage and dispensing area located at the southwest corner of the residence to construct a concrete floor slab. The excavated soil was reportedly placed in the southwestern corner of the 62nd Avenue Property adjacent to the fenced property line with the Preschool Property. Prior to the interim remedial action program (SECOR, January 15, 1999), the ground surface in this area was either exposed soil or covered by grass, blackberries, and other vegetation, and it sloped towards the south-southwest with a small (<1 foot) drop at the property line.

## **2.3 SUMMARY OF PREVIOUS WORK**

The RI/FS report contains a detailed description of the work completed to date at the site. This section provides a brief overview of the previous work.

### **2.3.1 Pre-RI/FS Investigations**

Previous investigations at the site included limited soil sampling by Ecology and Seattle-King County Department of Public Health (SKCDPH), soil sampling during excavation adjacent to the residence on the 62<sup>nd</sup> Avenue Property by Pacific Groundwater Group (PGG), and analysis of household material samples collected by a former tenant of the basement apartment. Results of the previous investigations are described in the RI/FS Report.

### **2.3.2 Interim Actions**

Investigations completed prior to the RI/FS detected concentrations of one or more of the target pesticides in soil above applicable cleanup levels in limited areas of the Preschool Property and throughout the southwest portion of the 62<sup>nd</sup> Avenue Property. In response to these discoveries, several interim remedial actions were implemented at the site under



the terms of an Emergency Agreed Order issued by Ecology. A detailed discussion of the interim actions completed at the site prior to the RI/FS is included in the RI/FS Report.

As discussed in the RI/FS Report, a buffer zone was constructed between the 62<sup>nd</sup> Avenue and the Preschool Properties in August 1998. A perched groundwater in the vadose zone interceptor trench was subsequently installed in the buffer zone in May 1999 to capture perched groundwater in the vadose zone that possibly contained concentrations of pesticides that may migrate from contaminated areas of the 62<sup>nd</sup> Avenue Property to the Preschool Property. Increased infiltration of surface water to the vadose zone during the 1999/2000 wet season resulted in an increased volume of water extracted from the interceptor trench. An Industrial Waste Discharge Authorization was received from the King County Department of Natural Resources, Industrial Waste Program for direct discharge of the extracted water from the vadose zone interceptor trench to the sanitary sewer. Monthly water samples have been collected from the vadose zone extraction system, analyzed for the target pesticides, and reported to King County Industrial Waste and Ecology. The perched groundwater in the vadose zone extraction system is currently operational and will remain in-place until the final cleanup is completed.

Soil samples have been collected from the buffer zone on a quarterly basis during 1998 and 1999 to evaluate whether concentrations of pesticides continue to migrate from the 62<sup>nd</sup> Avenue Property to the Preschool Property. During December 1999, soil samples were collected from the Preschool Property south of the buffer zone to evaluate whether concentrations of pesticides were present. Several soil samples in the northwest corner of the Preschool Property contained concentrations of the target pesticides above the MTCA Method B soil cleanup levels. Therefore, as an interim action, additional excavation was performed to remove the contaminated soil from the Preschool Property. Approximately six cubic yards of soil was excavated from the Preschool Property and is currently stockpiled at the 62<sup>nd</sup> Avenue Property on visqueen plastic pending disposal during the final cleanup. Soil samples were collected from the Preschool Property which confirmed removal of contaminated soils prior to backfill and re-sodding of the remediated area. Since January 1999, the buffer zone has been monitored on a monthly schedule. Compliance monitoring to be conducted after completion of the soil removal is discussed in Section 5 of this CAP and the SAP included in Appendix C.

During January 2000, an interim action to limit the volume of surface water runoff on the site was installed by Farallon. The interim action included re-routing the roof drain lines from the residence and garage to discharge off-site to the storm water drainage ditch along 62<sup>nd</sup> Avenue.

Exploratory Boring SB-1 (Figure 2) was completed at the site as part of an interim action to evaluate the local stratigraphy/hydrogeology to address Ecology's concerns that concentrations of pesticides in the shallow subsurface soils may affect groundwater underlying the site. The results of the soil boring confirmed that impermeable glacial till extends from the surface to 49.5 feet below ground surface (bgs) beneath the site. A groundwater-bearing interval was not encountered in Boring SB-1 to the total depth explored of 49.5 feet bgs.

### 2.3.3 Remedial Investigation/Feasibility Study

The information obtained from the prior investigations and interim remedial measures conducted at the site were used to develop the scope of work for the RI/FS of the site. The purpose of the RI/FS was to ascertain the distribution of pesticides on the site by collecting and analyzing a sufficient number of soil samples to fully characterize the soil conditions. A total of 226 soil samples were collected for the RI/FS from 58 separate locations on the site. Over 100 of these soil samples were submitted to an approved laboratory for chemical analysis. The analytical results from these soil samples, together with the information obtained during previous investigations, fully characterized the distribution of pesticides in the soil at the site.

The results of the RI/FS determined that the concentrations of pesticides in the soil are widespread over most of the 62nd Avenue Property. No pesticides were detected above applicable cleanup levels on any of the properties adjacent to the 62nd Avenue Property except: a soil sample collected from the wooded portion of the property directly to the north that contained a single pesticide in concentrations slightly above applicable cleanup levels, and a soil sample collected by Ecology in the storm water drainage ditch located on the east side of the site.

The concentrations of pesticides at the 62nd Avenue Property decrease rapidly with depth. Within 1 to 2 feet of the surface, less than 1/3 of the 62nd Avenue Property contains pesticide concentrations above applicable cleanup standards. Within 2 to 3 feet of the surface, there are only 7 very limited and discrete areas containing pesticide concentrations above applicable cleanup standards. Below three feet of the surface, there are no pesticide concentrations above applicable cleanup standards.

The information derived from the RI/FS was used to evaluate technically feasible remedial action alternatives applicable to the site. A broad range of technologies were identified that could meet the remedial action objectives for the site. These technologies were evaluated and compared based on the criteria set forth in WAC 173-340-360. Protection of human health and the environment was the most important criterion used to evaluate and compare the various alternatives. This evaluation process resulted in the selection of a preferred remedial alternative. All other remedial alternatives were ruled out because they were either technically impractical, inconsistent with current or planned future uses of the property, or disproportionately expensive.

The RI/FS selected Alternative 5, which includes the excavation and off-site disposal of soil from the site that contains concentrations of one or more of the target pesticides above the MTCA Method B residential soil cleanup levels based on the carcinogenic formula values listed in CLARC II is described in Section 4.1 of this CAP. A total volume of 1,400 tons of soil is estimated for removal from the site.

## 2.4 ENVIRONMENTAL SETTING

### 2.4.1 Geology

According to geologic mapping by Galster and Laprade (1991) and Minard (1983), the site is located on the Kenmore Upland ridge which is underlain by Vashon Till. This till is locally underlain by the Esperance Sand and the Lawton Clay (Galster and Laprade, 1991).

The Esperance Sand outcrops to the east and south of the site in the valleys and lowlands along the margins of Lake Washington. The Lawton Clay outcrops in the creek that forms the small valley trending north-south approximately 300 feet west of the site parallel to 61<sup>st</sup> Avenue NE.

Exploratory Boring SB-1 was advanced at the site as part of an interim action to evaluate the local stratigraphy and hydrogeology. An interval of glacial till extending from the surface to 49.5 feet bgs was encountered in Exploratory Boring SB-1. These results are consistent with regional geologic mapping.

### 2.4.2 Hydrology

Groundwater migration in the Puget Sound Region is generally confined to the most recent alluvial deposits overlaying the glacial till or over-consolidated sands and gravels (Esperance Sand) which underlie the glacial till. The dense and relatively impermeable nature of the till and the commonly discontinuous lateral continuity of the groundwater-bearing materials impede lateral and vertical migration of the groundwater. Documented laboratory testing has shown that the permeability of glacial till typically ranges from  $10^{-5}$  to  $10^{-7}$  centimeters per second. This permeability range is considered to be relatively low. The Esperance Sand represents the first possible significant water-bearing zone underlying the site vicinity.

Perched groundwater in the vadose zone encountered within the upper 3 feet of soil underlying the site appears to be limited to the wet season based on observations by Farallon during the summer and early fall of 1999. The extensive drilling program conducted at the site for the RI/FS and subsequent exploratory boring (SB-1) did not encounter nor observe a definite perched groundwater zone. Based on the soil boring (SB-1), moist conditions were observed in the vadose zone which is characteristic of separate perched groundwater. Neither the Esperance Sand nor a groundwater-bearing interval was encountered in boring SB-1 to the total depth explored of 49.5 feet bgs.

### 2.4.3 Land Use

The site and surrounding properties are zoned and used for residential development. The future and continued use of the area will be residential. The Preschool Property will continue to be a preschool for young children.

#### **2.4.4 Surface Water**

The site and other properties in the vicinity slope to the south and west. Surface water runoff from the northern, and southwestern, sides of the 62<sup>nd</sup> Avenue Property flows to the south-southwest into the buffer zone and is captured in the interceptor trench. Surface water from the southern eastern portion of the 62<sup>nd</sup> Avenue Property flows to the south, towards the driveway of the Preschool Property. Surface water from the eastern portion of the 62<sup>nd</sup> Avenue Property flows to the ditch on the west side of 62<sup>nd</sup> Avenue. During January 2000, an interim action was implemented to limit the volume of surface water runoff flowing toward the buffer zone and to re-route the roof drain lines from the residence and garage to discharge off-site to the storm water drainage ditch on the east side of the site.

### 3.0 TECHNICAL ELEMENTS

This section provides a summary of the technical elements applicable to the cleanup of the site that are discussed in more detail in the RI/FS. This section summarizes the applicable or relevant and appropriate requirements (ARARs); the soil categories defined in the Environmental Media Management Plan (EMMP) prepared by Farallon dated April 6, 2000 (Appendix A); constituents and media of concern; and the selected cleanup levels.

#### 3.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

A detailed evaluation of ARARs was presented in the RI/FS. Cleanup of the site will be conducted under an Agreed Order with Ecology which has incorporated the requirements of the ARARs for the site. Ecology will be the lead agency for compliance with the State Environmental Protection Act (SEPA) and will determine the substantive requirements of local permits. As defined in the EMMP, Ecology has agreed to specific criteria for waste management of contaminated soil generated from the site to obtain the contained-in designation for some of the soil to be excavated from the site. The EMMP has grouped the contaminated soils into four categories based on *in-situ* soil sampling analytical results, and it has provided criteria for the classification and disposal of each category of contaminated soil in accordance with the principles of the contained-in policy and dangerous waste regulations. A copy of the EMMP is included in Appendix A.

ARARs identified for the site in the RI/FS include:

- MTCA (Chapter 70.105D RCW);
- MTCA Cleanup Regulations (Chapter 173-340 WAC);
- MTCA Cleanup Levels and Risk Calculations Update (CLARC II);
- Hazardous Waste Management Act (Chapter 70.105 RCW);
- Dangerous Waste Regulations (Chapter 173-303 WAC);
- Ecology “Contained-In” Policy;
- State Environmental Policy Act (Chapters 197-11 and 173-802 WAC);
- King County Industrial Waste Regulations (Ordinance No. 11034);
- City of Kenmore Grading Permit;
- Health and Safety-29 CFR Part 1910.120; 8 CCR 5192 and USEPA Standard Operating Safety Guides for Hazardous Waste Operations (1986); and,
- Minimum standards for Construction and Maintenance of Wells (Chapter 173-160 WAC).

The primary ARARs that are applicable to the site are:

- MTCA Cleanup Regulations (Chapter 173-340 WAC);
- MTCA Cleanup Levels and Risk Calculations Update (CLARC II);
- Dangerous Waste Regulations (Chapter 173-303 WAC); and,
- Ecology “Contained-In” Policy.

The applicability of the primary ARARs to the site cleanup and disposal options is discussed below.

### 3.1.1 MTCA

The multiple constituents and residential land use and zoning of the site requires the use of MTCA Method B residential soil cleanup levels (WAC 173-340-700(3)(b)). MTCA Method B has been selected as the primary ARAR for selection of cleanup levels based on the multiple chemicals detected within the soil, the uses of the site, and applicable zoning regulations. The MTCA Method B residential soil cleanup levels used for this CAP are based on the carcinogenic formula values set forth in the MTCA Cleanup Levels and Risk Calculations (CLARC II) updated February 1996.

### 3.1.2 Dangerous Waste Regulations

Based on the identified chemicals used at the site, the dangerous waste regulations (Chapter 173-303 WAC) are applicable to the off-site disposal of contaminated soil removed from the site. The following chemicals of concern identified in the RI/FS are listed wastes under the Discarded Chemical Products List (WAC 173-303-9903):

Compound	Dangerous Waste No.
Aldrin	P004
Chlordane	U036
DDT	U061
Dieldrin	P037
Endrin Ketone	P051
Heptachlor	P059

Based on Discarded Chemical Products, WAC 173-303-081, soil waste with concentrations of one or more of these compounds generated from the site cleanup would be designated a dangerous waste and would be subject to the restrictions of Chapter 173-303 WAC. These restrictions would include a land-ban disposal of all the soil waste generated from the site, thus requiring incineration as the only disposal option; however, Ecology has confirmed that a Contained-In Determination is applicable to some of the soils to be excavated from the site, as discussed below.

#### 3.1.2.1 Contained-In Designation

The applicability of the Contained-In Designation by Ecology to some of the soil to be excavated from the site is based on the following soil categories for contingency management:

- Concentrations of one or more of the target pesticides in the soil do not exceed the Dangerous Waste Characteristics levels (WAC 173-303-090); and,

- Concentrations of one or more of the target pesticides in the soil do not exceed the Dangerous Waste Criteria levels (WAC 173-303-100).

Based on these criteria, Ecology, in consultation with the United States Environmental Protection Agency (EPA), has agreed to apply the Contained-In Designation to some of the soil waste to be excavated from the site (Ecology letter dated March 7, 2000) as discussed in the EMMP.

### 3.1.2.2 Soil Categories

Farallon has prepared an EMMP (Appendix A) that provides a detailed discussion of the contingency management plan for the handling, transporting, and disposing of the soil waste generated from the site in order to meet the requirements of the Contained-In Designation by Ecology. The EMMP defines the disposal facility and categories of soil for handling and transportation. The determination of the soil category for the soil waste is dependent on the analytical result of *in-situ* soil samples. Category 1 and 2 Soils will be designated as contained-in and disposed of as non-dangerous waste in accordance with the EMMP. Collection and analysis of *in-situ* soil samples for Toxicity Characteristic Leaching Potential (TCLP) is necessary to determine the disposal option for the Category 3 Soils. Category 4 Soils will be designated as dangerous waste and disposed of in accordance with the Chapter 173-303 requirements as defined in the EMMP.

The analytical results of soil samples summarized in the RI/FS with concentrations of one or more of the target pesticides above the MTCA Method B cleanup levels are summarized on the attached Table 1. Table 1 also includes the equivalent concentrations for state toxicity criteria for pesticide constituents in each soil sample. A summary of the analytical results of all soil samples collected at the site, laboratory analytical reports, and sample locations are included in the RI/FS Report. The following soil categories have been defined for the site:

#### **Category 1 Soils:**

- Concentrations of one or more of the target pesticides are above the MTCA Method B residential soil cleanup levels;
- Concentrations of dieldrin are equal to or less than 1,300 micrograms/kilogram (ug/kg);
- Concentrations of chlordane are equal to or less than 2,600 ug/kg;
- Equivalent concentration for state-only toxicity is equal to or less than 0.01%; and,
- Total halogenated organic compounds (HOCs) for state-only persistence is less than 0.01%.

The analytical results of soil samples collected from the site that meet the criteria of Category 1 Soils are summarized on Table 2.

**Category 2 Soils:**

- Concentrations of one or more of the target pesticides are above the MTCA Method B residential soil cleanup levels;
- Concentrations of dieldrin are greater than 1,300 ug/kg, but equal to or less than 10,000 ug/kg;
- Concentrations of chlordane are greater than 2,600 ug/kg, but equal to or less than 15,000 ug/kg;
- Equivalent concentration for state-only toxicity is equal to or less than 0.01%; and,
- Total HOCs for state-only persistence is less than 0.01%.

The analytical results of soil samples collected from the site that meet the criteria of Category 2 Soils are summarized on Table 3.

**Category 3 Soils:**

- Concentrations of one or more of the target pesticides are above MTCA Method B residential soil cleanup levels;
- Concentrations of dieldrin are equal to or less than 10,000 ug/kg;
- Concentrations of chlordane are greater than 15,000 ug/kg, but pass the TCLP criteria;
- Equivalent concentration for state-only toxicity is equal to or less than 0.01%; and,
- Total HOCs for state-only persistence is less than 0.01%.

The analytical results of soil samples collected from the site that meet the criteria of Category 3 Soils are summarized on Table 4.

**Category 4 Soils:**

Category 4 Soils are designated as dangerous waste, which contains concentrations of one or more target pesticides above MTCA Method B residential soil cleanup levels and meets any one of the following criteria:

- Concentrations of dieldrin are greater than 10,000 ug/kg; or,
- Concentrations of chlordane are greater than 15,000 ug/kg, and fail the TCLP criteria; or,
- Equivalent concentration for state-only toxicity is greater than 0.01%; or,
- Total HOCs for state-only persistence is equal to or greater than 0.01%.

The analytical results of soil samples collected from the site that meet the criteria of Category 4 Soils are summarized on Table 5.



## **3.2 LOCAL PERMITS/SUBSTANTIVE REQUIREMENTS**

The site cleanup will be performed under an Agreed Order with Ecology. When site cleanup is performed under an Agreed Order, compliance with the procedural aspects of certain state permits and all local permits or approvals is not required. Instead, Ecology determines and applies the substantive requirements of the local permits or approvals. Included with this CAP are the permit applications that would be required by local regulatory agencies in the absence of the Agreed Order exemption as described below.

### **3.2.1 Grading Permit**

The city of Kenmore requires a grading permit for excavations greater than 50 cubic yards, a State Environmental Protection Act (SEPA) checklist and a determination of non-significance (DNS) for excavations greater than 500 cubic yards. The expected volume of soil to be excavated from the site is greater than the 500 cubic yards and would require the SEPA determination from the city of Kenmore. Under the Agreed Order, Ecology will be the lead agency for approval of the substantive equivalent permit requirements. A copy of the substantive requirements under the grading permit application and SEPA checklist are attached in Appendix B. A 30-day public comment period is required for the SEPA checklist. The 30-day public comment period will run concurrently with the comment period required by the Agreed Order. Ecology will issue a DNS for the site cleanup at the end of the 30-day comment period unless Ecology determines that public comment or other concerns require a different result.

### **3.2.2 Wastewater Disposal Permit**

Disposal of wastewater generated from the site, which will include decontamination washwater, recovered perched groundwater in the vadose zone, and captured stormwater, requires a Discharge Authorization (DA) with King County Department of Natural Resources Industrial Waste Program. A DA has been obtained for the Interim Actions at the site and will be extended under the Agreed Order for the site cleanup. A copy of which is attached in Appendix B. The discharge and monitoring requirements of the DA will be followed during the site cleanup.

## **3.3 CONSTITUENTS OF CONCERN**

The constituents of concern (herein referenced as the target pesticides) were identified based on a comparison of the analytical results of soil samples collected by the previous investigations, interim actions and the RI/FS with MTCA Method B residential soil cleanup levels, ARARs, and discussions with Ecology. A total of nine pesticides with established MTCA Method B residential soil cleanup levels, per the formula values listed in CLARC II, Chapter 173-340 WAC, were detected in soil samples collected during the previous investigations, the interim actions, and the RI/FS.

These nine pesticides comprise the constituents of concern (target pesticides):

- chlordane (alpha and gamma isomers);
- dieldrin;
- aldrin;
- endrin;
- heptachlor;
- heptachlor epoxide;
- DDT;
- DDD; and,
- gamma and delta hexachlorocyclohexane (lindane and delta BHC).

### **3.4 MEDIA OF CONCERN**

#### **3.4.1 Soil**

Soil has been identified as the medium of concern based on results of prior investigations, interim actions, and the RI/FS.

Groundwater was not encountered during any of the previous investigations, interim actions, or the RI/FS. The regional groundwater-bearing zone is expected to occur at depths greater than 50 feet bgs beneath a relatively impermeable layer of glacial till. The results of a soil boring (SB-1) conducted at the site subsequent to completion of the RI/FS, the characteristic limited mobility of pesticides in soil, the low permeability of the soil, regional depth to groundwater, and the results of soil sampling at depth, suggest that groundwater beneath the site is probably not affected by pesticides from the site and does not appear to be a medium of concern.

#### **3.4.2 Perched Groundwater in the Vadose Zone**

The perched groundwater in the vadose zone has been identified as a medium of concern based on the analytical results of perched groundwater in the vadose zone samples collected from the buffer zone interceptor trench. The perched groundwater in the vadose zone appears to be limited to the wet season based on observations and perched groundwater in the vadose zone monitoring by Farallon during 1999.

### 3.5 CLEANUP STANDARDS

Cleanup standards for the site, as defined in WAC 173-340-700, include establishing cleanup levels and points of compliance at which the cleanup levels will be attained for the site to meet the requirements of the Agreed Order. The cleanup standards have been established for the site in accordance with MTCA (WAC 173-340-700 through WAC 173-340-760) which are protective of human health and the environment and comply with the cleanup standards and ARARs to meet the requirements of satisfaction of the Agreed Order.

#### 3.5.1 Cleanup Levels

Cleanup levels are the concentrations of the target pesticides that will be met at the points of compliance defined for the site to meet the requirements of the Agreed Order. Cleanup levels have been established for the target pesticides in soil and perched groundwater in the vadose zone. The cleanup levels are presented by media of concern in the following sections.

##### 3.5.1.1 Soil

The cleanup levels for soil applicable to the site are based on MTCA Method B residential soil cleanup levels using the carcinogenic formula values listed in CLARC II. The carcinogenic formula values were selected because they are more conservative and more protective of human health and the environment than the non-carcinogenic formula values. This higher level of protection is warranted because of the existing and planned future residential use of the site and site vicinity. The cleanup levels for the target pesticides are included in table 6.

##### 3.5.1.2 Perched Groundwater in the Vadose Zone

Perched groundwater in the vadose zone cleanup levels applicable to the site are the MTCA Method B cleanup groundwater levels. The cleanup levels for the constituents of concern for each respective compound are included on table 6.

### 3.6 POINTS OF COMPLIANCE

The points of compliance are the locations where cleanup levels for the media and constituents of concern must be attained to meet the requirements of the Agreed Order. This CAP has established points of compliance for perched groundwater in the vadose zone [WAC 173-340-720(6)] and soil [WAC 173-340-740(6)] at the site.

### 3.6.1 Soil

The points of compliance for soil at the site are defined as all soils within the site where analytical results of *in-situ* soils samples detect concentrations of one or more of the target pesticides above MTCA Method B residential soil cleanup levels shown on table 6.

### 3.6.2 Perched Groundwater in the Vadose Zone

The points of compliance for perched groundwater in the vadose zone are defined as sumps to be located on the west, south, and east property boundaries of the 62<sup>nd</sup> Avenue Property. The sump locations, construction details, and sampling protocols are summarized in more detail in the SAP in Appendix C.

## 3.7 SITE CLOSURE

The requirements for a site closure and removal from The Hazardous Site List by Ecology will be met by the completion of the cleanup action. All soil with concentrations of one or more of the target pesticides above the applicable cleanup levels will be removed from the site. Compliance monitoring will be conducted to confirm the long term effectiveness of the cleanup action on soil and Perched groundwater in the vadose zone. The cleanup action will meet the requirements of the Agreed Order and will not include a deed restriction or institutional controls once the cleanup levels are met at the defined points of compliance.

## **4.0 DESIGN AND IMPLEMENTATION**

The selected cleanup alternative to be implemented under the Agreed Order with Ecology, is Alternative 5, that was presented in the RI/FS. This alternative includes excavation and off-site disposal of soil with concentrations of one or more of the target pesticides above the selected cleanup levels. Additional details regarding the design and installation of the cleanup alternative are presented in the following sections.

### **4.1 DESCRIPTION OF CLEANUP ACTION**

The final cleanup action involves the excavation and off-site disposal and/or incineration of soil with concentrations of one or more of the target pesticides above the MTCA Method B residential soil cleanup levels shown on Table 6. The final cleanup action consists of the following elements:

- Collection of soil samples from the Category 3 Soils sampling locations prior to excavation for Toxicity Characteristic Leaching Procedure (TCLP) analysis;
- Excavation of soil from the site to a maximum depth of three feet bgs unless the analytical results of compliance samples indicate that deeper excavation is necessary. An estimated 1,400 tons of soil will be excavated and disposed of off-site or incinerated;
- Disposal of the soil waste in accordance with the dangerous waste regulations and/or the Contained In determination requirements;
- Compliance sampling and analysis to confirm that the soils meet the cleanup levels at the defined points of compliance;
- Restoration of the site to the existing conditions prior to the soil excavation and removal; and,
- Compliance monitoring of perched groundwater in the vadose zone as described in the SAP to confirm that the perched groundwater in the vadose zone meets the cleanup levels at the defined points of compliance.

#### **4.1.1 Cleanup Objectives**

The objective of the cleanup described in this CAP is to meet the requirements of MTCA 4WAC 173-340 for completion of the cleanup actions required by the Agreed Order. This will be achieved through a final cleanup of the site by excavation and off-site disposal or incineration of all soils with concentrations of one or more of the target pesticides above the MTCA Method B cleanup level for soil. Monitoring of the perched groundwater in the vadose zone will be performed to confirm that concentrations in the perched groundwater are below the selected cleanup levels of all of the target pesticides. No pesticides at concentrations above applicable cleanup standards will remain on the site upon the completion of the final cleanup action. The final cleanup action will be

protective of both human health and the environment and will result in a permanent and final cleanup solution for the site.

#### **4.1.2 Restoration Time Frame**

The site cleanup is scheduled for late June to early July 2000. Farallon estimates approximately 6 to 8 weeks to complete the soil removal and site restoration. A preliminary construction schedule is shown on Table 7. The perched groundwater in the vadose zone sumps will be decommissioned in accordance with WAC 173-160 at the completion of the perched groundwater monitoring.

#### **4.1.3 Final Closure**

The site will be removed from the Hazardous Sites List once confirmation soil and perched groundwater in the vadose zone sampling and monitoring have been completed and validates that the cleanup levels for soil and perched groundwater have been met at the defined points of compliance. A final removal of the site from the Hazardous Site List will be provided by Ecology once perched groundwater compliance sampling confirms that the cleanup levels for perched groundwater have been met at the defined points of compliance.

### **4.2 DEFINITION AND DELINEATION OF EXCAVATION AREAS**

The soil categories agreed to by Ecology and defined in the EMMP will determine the specific excavation, handling, transportation, and disposal requirements as defined in the EMMP and discussed in more detail in this CAP. The results of the site soil sampling have been used to define the distribution of the soil types at the site. The distribution of each soil category on-site and its estimated volume is discussed below.

#### **4.2.1 Category 1 Soils**

The analytical results of soil samples that meet the criteria of Category 1 Soils are summarized on Table 2. The areas with soil that meet the criteria for Category 1 Soils from surface to a depth of one-foot bgs (Lift 1) are shown on Figure 3. The Category 1 Soils from 1 to 2 feet bgs (Lift 2) or from 2 to 3 feet bgs (Lift 3) are shown on Figures 4 and 5. Based on the distribution of soil that meet the criteria of Category 1 Soils, Farallon has estimated that a total of 400 tons of Category 1 Soils will be excavated from the site.

#### **4.2.2 Category 2 Soils**

The analytical results of soil samples that meet the criteria of Category 2 Soils are summarized on Table 3. The areas with soil that meet the criteria for Category 2 Soils in Lift 1 are shown on Figure 3. The areas of soil that meet the criteria for Category 2 soils

in Lift 2 are shown on Figure 4, and those in Lift 3 are shown on Figure 5. Farallon has estimated that a total of 725 tons of Category 2 Soils will be excavated from the site.

#### **4.2.3 Category 3 Soils**

The analytical results of soil samples that meet the criteria of Category 3 Soils are summarized on Table 4. The areas with soil that meet the criteria for Category 3 Soils in Lift 1 are shown on Figure 3. There are no Category 3 Soils in Lift 2 or Lift 3. Farallon has estimated that a total of 25 tons of Category 3 Soils will be excavated from the site.

Additional soil samples will be collected for TCLP analysis at the sample locations that meet the criteria for Category 3 Soils, as discussed in the SAP. The analytical results of the TCLP analysis will be evaluated to determine whether the soil will be handled as a contained-in soil similar to Category 2 Soils, or if it will be designated as a dangerous waste for incineration similar to Category 4 Soils.

#### **4.2.4 Category 4 Soils**

The analytical results of soil samples that meet the criteria of Category 4 Soils are summarized on Table 5. The areas with soil that meet the criteria for Category 4 Soils in Lift 1 are shown on Figure 3. There are no Category 4 Soils in Lift 2 or Lift 3. Farallon has estimated a total of 250 tons of Category 4 Soils will be excavated from the site.

### **4.3 PRE-EXCAVATION SITE PREPARATION**

Prior to excavation at the site, the following will be completed:

#### **4.3.1 Protection Monitoring Instruments**

The Health and Safety Plan (HASP) included in Appendix D requires personal protection equipment (PPE) during the site excavation that includes continuous dust (protection) monitoring apparatus. To monitor airborne dust, a Miniram PDM-3 air sampling instrument will be used at the site to monitor air quality in the breathing zone during cleanup activities. The Miniram instrument will be used to monitor air quality and the airborne particulate material during the final cleanup activities. The specific air monitoring instrument, operating and monitoring procedures, and documentation are defined in the site-specific HASP.

#### **4.3.2 Installation of Erosion Control Measures**

Erosion control measures will be required to mitigate any potential for off-site migration of pesticide-laden sediments during the site excavation. A detailed Erosion and Sedimentation Control Plan is included with the Grading Permit Application attached in Appendix B. The Erosion and Sediment Control Plan provides specific construction

details for erosion control during the site excavation. Erosion control to be installed prior to excavation will include:

- Control and containment of stormwater runoff
- Control and containment of dust
- Control and containment of mud on equipment and truck tires
- Control and containment of decontamination washwater

Location of underground utilities will be completed on-site with the erosion control. It is likely that the underground utilities will be disconnected and temporarily capped during the excavation.

#### **4.3.3 Collection of Category 3 Soils Samples**

*In-situ* soil samples will be collected from the soil sample locations that meet the criteria for Category 3 Soils. The soil samples will be collected in accordance with the SAP, and will be analyzed for TCLP. The analytical results will be reviewed to determine if the soils meet the criteria for the Contained-In Determination, or if they will meet the criteria as a dangerous waste.

#### **4.3.4 Removal of Garage, Vegetation, and Concrete Paving**

The existing garage will be demolished. The demolition debris and all above-grade vegetation and concrete paving will be removed and disposed of off-site. This will include all trees, shrubs, concrete walkways, and other debris currently stockpiled on-site. These materials will be disposed of in a suitable landfill as construction debris. Care will be taken during this task not to disturb the surface and shallow subsurface soils.

#### **4.3.5 Construction of Contamination Reduction Corridor/Support Zone**

A contamination reduction corridor (CRC) will be constructed in the area of the former garage and driveway along the northern side of the site (Figure 6). Contaminated soil in this area will be removed during the first phase of excavation to provide an area of clean soil for a CRC, a staging area for soil disposal drop boxes, and a support zone excluded from the contaminated portions of the site during cleanup activities. The total area of the CRC will be approximately 4,550 ft<sup>2</sup> extending approximately 150 feet from the northeast corner of the site toward the western property line, as shown on Figure 6.

Contaminated soils will be excavated from the CRC to clean soils, as discussed below in more detail. Once the analytical results of confirmation soil samples collected in accordance with the SAP are confirmed, the CRC area will be constructed. An impermeable liner of geotextile fabric will be placed on clean backfill and overlain with crushed rock to provide a support zone for completion of the site cleanup, as well as a clean, stable platform for staging of soil bins and dump trucks.



#### **4.3.6 Delineation of Loading and Holding Areas**

An area within the CRC will be designated for the Category 4 Soils locked drop-box, drop-off, storage, and pick-up area. The designated space will be used as a holding area while soil drop boxes are filled with Category 4 Soils. Figure 6 shows the proposed soil drop box holding area.

A specific area within the CRC will be constructed for loading of Category 1 and 2 Soils directly into dump trucks. The CRC will be constructed such that non-excavation equipment, such as dump trucks, drop box loading trucks, and support vehicles, do not come in contact with contaminated soil and only drive on clean backfill.

#### **4.3.7 Decontamination Truck Wash Area**

A truck wash area and decontamination washwater containment area will be constructed within the CRC to avoid any potential for contaminated soils to be transported off-site by truck wheels. The proposed truck wash area is shown on Figure 6 and will consist of an area for visual inspection of all truck wheels by on-site personnel. Soils will be swept off by hand prior to the truck leaving the CRC to the public street. If wet soils have adhered to the truck wheels, a power washer system will be used to clean the truck prior to departure from the site. Decontaminated washwater will gravity flow to a plastic-lined and bermed catch basin pending disposal.

### **4.4 SOIL EXCAVATION/HANDLING AND SEQUENCING**

The Category 1 and 2 Soils will be managed as dangerous waste during excavation to eliminate the potential exposure pathways and associated risks to human health and the environment. However, Ecology has designated the Category 1 and 2 Soils as contained-in for disposal at an appropriate landfill, as discussed in the EMMP. The Category 4 Soils will be designated dangerous waste and will be handled, transported, and disposed of in accordance with the restrictions imposed by WAC 173-303.

The different designation of the soil categories and distribution at the site will dictate the overall excavation and handling approach used for cleanup of the site. Detailed and careful procedures as defined in this CAP will be employed to segregate each soil type during excavation to meet the requirements of the Contained-In Determination. A backhoe will be used for the majority of the excavation; however, the limited soil excavation inside the existing residence will be performed manually due to the access limitations within the residence.

The site was delineated into subareas to guide the sampling for the RI/FS (RI/FS Subareas). To help guide the excavation, The RI/FS Subareas have been modified into different Subarea definitions. The site has been delineated into the following horizontal areas to guide the excavation: The CRC Subarea, Exterior Subarea, and Interior Subarea (Figure 6). The vertical distribution of the concentrations of the target pesticides is limited to a maximum depth of 3-feet bgs based on the results of previous soil sampling and analysis. The actual depth of the final

excavation will be defined by the results of the performance sampling. Thus the site has been delineated into vertical areas to guide the excavation: Lift 1 - surface to 1 foot bgs; Lift 2 – 1 to 2 feet bgs; and Lift 3 – 2 to 3 feet bgs. The areal and vertical distribution of the soil categories is shown on Figures 3, 4, and 5.

The excavation procedures to be used for the site cleanup will be staged by horizontal and vertical subarea.

#### **4.4.1 Soil Category Handling Procedures**

Categories 1, 2, 3, and 4 soils occur throughout the site in Lift 1. Only Category 2 soils occur in Lift 2 throughout the site. Lift 3 contains limited areas of Category 1 and 2 soils.

##### **4.4.1.1 Category 1 Soils**

Category 1 Soils will be excavated and loaded directly into dump trucks staged in the CRC. The dump trucks will be equipped with tarp covers for transportation to an approved landfill.

##### **4.4.1.2 Category 2 Soils**

Category 2 Soils will be excavated and loaded directly into lined and diapered dump trucks staged in the CRC. The dump trucks will be equipped with tarp covers for transportation to an approved landfill.

##### **4.4.1.3 Category 3 Soils**

Category 3 Soils that have TCLP concentrations below the threshold limit will be loaded directly into lined and diapered dump trucks equipped with tarp covers for transportation to an approved landfill. Category 3 Soils that have TCLP concentrations above the threshold limit will be loaded directly into locked drop boxes stored in the CRC for transportation to an incinerator.

##### **4.4.1.4 Category 4 Soils**

Category 4 Soils will be excavated and loaded directly into locked drop boxes staged in the CRC. Category 4 Soils will be temporarily stored in the drop boxes on-site in the CRC holding area until the particular drop box is full. Full drop boxes will be covered for transportation to an incinerator.

#### **4.4.2 Excavation Sequencing**

The sequencing of soil excavation will include five separate phases: 1) Excavation of Lifts 1, 2, and 3 in the CRC Subarea; 2) Excavation of Lifts 1, 2, and 3 in the Interior Subarea; 3) Excavation of Lift 1 in the Exterior Subarea; 4) Excavation of Lift 2 in the Exterior Subarea; and 5) Excavation of Lift 3 in the Exterior Subarea. The areas of Lift 1

with Category 4 Soils will be excavated first, in the CRC and exterior subareas, followed by areas with Category 2 Soil, and completed with Category 1 Soils. This procedure will be utilized for each lift in each Subarea until the site cleanup is completed. The excavation will be guided by performance soil sampling to delineate the extent of the areas with each soil category type based on *in-situ* samples as defined in the SAP. Analytical results of performance samples that are non-detect will be considered compliance samples and will be used for site closure. A detailed discussion of the performance sampling/compliance protocols is provided in the SAP.

#### 4.4.2.1 CRC Subarea Excavation

The CRC Subarea is shown on Figure 6. The distribution of the soil categories within each lift are shown on Figures 3, 4, and 5. Following excavation of the CRC Subarea, compliance soil samples will be collected in accordance with the SAP to confirm that all of the contaminated soil has been removed and that the CRC can be constructed.

Category 3 Soils located in Lift 1 on the northwest side of the garage (RI/FS sample location B5, Figure 3) will be resampled prior to excavation of the CRC Subarea. If the analytical results are below the TCLP levels, the soil will be excavated and handled as Category 2 Soil. If the analytical results are above the TCLP levels, the soil will be excavated and handled as Category 4 Soil, as discussed below.

The first phase of excavation to prepare the CRC will include excavating portions of the CRC area to a proposed total depth of three feet bgs. The two small areas of Category 4 Soils adjacent to the north side of the garage and residence in Lift 1 (Figure 3) will be excavated and placed directly into locked drop boxes for transport and incineration off-site. The Category 2 Soils in Lifts 1, 2, and 3 will be excavated and loaded directly into lined and diapered dump trucks equipped with tarp covers for immediate transport off-site to an approved disposal facility. The Category 1 Soils in Lifts 1 will be excavated and loaded directly into covered dump trucks equipped for immediate transport off-site to an approved disposal facility.

The CRC area will be backfilled with clean imported material after compliance sampling results confirm that all contaminated soil has been removed. The CRC staging area will be constructed as discussed above after placement of the backfill in order to continue the site cleanup.

#### 4.4.2.2 Interior Subarea

The Interior Subarea is defined as the area located on the southwest portion of the residential building interior (Figure 6) which was the RI/FS Subarea 1. Excavation of the interior subarea will require saw cutting of the concrete floor

slab and removal of the concrete debris. The concrete debris will be disposed of off-site as construction debris.

The soils underlying the concrete slab area will be excavated by hand to approximately two feet below the bottom of the slab elevation (Figures 3 and 4). The RI/FS results indicate that the soils in this area meet the criteria as Category 2 or 3 Soils. Additional soil samples will be collected from this Subarea prior to excavation to determine the specific handling and disposal requirements. Soil that meets the criteria as a Category 2 Soils will be excavated by hand and will be stockpiled outside of the building and transported from the stockpile by backhoe to lined and diapered dump trucks for immediate off-site disposal. Soil that meets the criteria of a Category 4 Soils will be transported from the hand-excavated stockpile to locked drop boxes staged in the CRC for off-site disposal.

The excavation will be backfilled with clean imported soils after the cleanup of the Exterior Subarea is completed. The backfill will be compacted and a new concrete slab will be placed.

#### **4.4.2.3 Exterior Subarea**

This Subarea comprises the entire area outside of the residence excluding the CRC. The Subarea includes the RI/FS Subareas 2, 3, 4, and the Buffer Zone. This Subarea also includes the stormwater drainage ditch on the west edge of 62<sup>nd</sup> Avenue NE (Figure 6). The Exterior Subarea will be excavated using a rubber-tired backhoe and a front-end loader.

#### **Excavation of Lift 1**

Excavation of Lift 1 includes the removal of Category 1, 2, 3, and 4 Soils as shown on Figure 3. Performance sampling defined in the SAP will delineate the lateral extent of each soil type within Lift 1. The preliminary lateral delineation shown on Figure 3 is based on the results of the RI/FS and provides a useful guide for the excavation. The exact limit of each soil category will be defined during the excavation by the results of the performance sampling.

Category 4 Soils will be excavated first, starting with the four areas located in the western portion of the site, followed by excavation of the areas located on the east side of the residence (Figure 3). The Category 4 soils will be excavated and placed in locked drop boxes temporarily stored on-site in the CRC pending off-site disposal once the locked drop boxes are full.

Category 3 Soils located on the southwest side of the site (sample location S-10 and B-18, Figure 3) will be resampled prior to excavation of Lift 1 of the Exterior Subarea. If the analytical results are below the TCLP levels, the soil will be excavated and handled as a Category 2 Soil. If the analytical results are above the

TCLP levels, the soil will be excavated and handled as a Category 4 Soil, as discussed below.

Category 2 Soils will be excavated from Exterior Subarea from the areas shown on Figure 3 and loaded directly into lined and diapered dump trucks for off-site disposal.

The Category 1 Soils to be excavated from the areas shown on Figure 3 and loaded directly into dump trucks for off-site disposal.

Compliance/performance sampling results will be collected at the base of the excavation completed for Lift 1 to determine the soil categories in each area and areas where deeper excavation is necessary well as. The results of the RI/FS will be incorporated with the cleanup compliance/performance sampling results to guide the excavation for Lift 2.

### **Excavation of Lift 2**

The results of the RI/FS indicate that there are limited areas of soil that will require cleanup in Lift 2 of the Exterior Subarea, all of which meet the criteria for a Category 2 Soils (Figure 4). The soil excavated from Lift 2 of the Exterior Subarea will be loaded directly into lined and diapered dump trucks for off-site disposal.

Compliance/performance sampling results will be collected at the base of the excavation completed for Lift 2 to determine the soil categories in each area and where deeper excavation is necessary. The results of the RI/FS will be incorporated with the cleanup compliance/performance sampling results to guide the excavation for Lift 3.

### **Excavation of Lift 3**

The results of the RI/FS indicate that there are very limited areas of soil which will require cleanup in Lift 3 of the Exterior Subarea, all of which meet the criteria for a Category 1 Soils (Figure 5). The Category 1 Soils excavated from Lift 3 of the Exterior Subarea will be loaded directly into dump trucks for off-site disposal.

Compliance/performance sampling results will be collected at the base of the excavation completed for Lift 3 to determine the soil categories in each area and areas where deeper excavation is necessary. The results of the RI/FS indicated that deeper excavation will not be necessary.

## 4.5 WASTE DISPOSAL

### 4.5.1 Soil Waste Disposal

The selected disposal facility for the soil waste generated from the site cleanup has been agreed to by Ecology and is defined by each soil category in the EMMP. The following disposal facilities will be used for disposal of the waste soil excavated from the site:

#### 4.5.1.1 Category 1 Soils

Category 1 Soils will be disposed of as non-dangerous waste at a landfill that meets the requirements of Chapter 173-351 WAC (within Washington State) and/or a Subtitle D landfill (outside Washington State).

#### 4.5.1.2 Category 2 Soils

Category 2 Soils will be disposed of as a contained-in waste soil at a RCRA Subtitle C landfill. The landfill will be instructed that these soils are not to be used for daily landfill cover.

#### 4.5.1.3 Category 3 Soils

Category 3 Soils with the analytical results of *in-situ* soil samples collected prior to excavation that are below the TCLP levels will be disposed of as a contained-in waste soil at a RCRA Subtitle C landfill. The landfill will be instructed that these soils are not to be used for daily landfill cover. Category 3 Soils with the analytical results of *in-situ* soil samples collected prior to excavation that are above the TCLP levels will be disposed by incineration.

#### 4.5.1.4 Category 4 Soils

Category 4 Soils will be disposed of by incineration.

#### 4.5.1.5 Selected Disposal Facilities

The RCRA Subtitle D landfill selected for disposal of the Category 1 Soils is the Regional Disposal Company Roosevelt Regional Landfill, Permit #CU 92-14. A copy of the Permits and Certifications for the Roosevelt Regional Landfill dated December 1999 is retained on file at the Farallon office. Farallon is currently evaluating costs associated with alternative Subtitle D landfills. Ecology will be notified if an alternative Subtitle D landfill is selected for disposal of the Category 1 Soils.

The RCRA Subtitle C landfill selected for disposal of the Category 2 Soils and Category 3 soils that do not fail the TCLP is the Waste Management Industrial Services Subtitle C Landfill located in Arlington, Oregon. A copy of the

Arlington Facility Guidebook is retained on file at the Farallon office. Farallon is currently evaluating costs associated with alternative Subtitle D landfills. Ecology will be notified if an alternative Subtitle C landfill is selected for disposal of the Category 2 Soils.

The Category 4 Soils and Category 3 Soils that fail the TCLP analysis will be transported to Onyx Environmental Services Incineration Facility in Texas. A copy of the permitting information for this facility is retained on file at the Farallon office. Farallon is currently evaluating costs associated with alternative incineration facilities. Ecology will be notified if an alternative incineration facility is selected for disposal of the Category 4 Soils.

#### **4.5.2 Waste Water Disposal**

Wastewater, including extracted perched groundwater in the vadose zone, surface water, and decontamination washwater, will be disposed of to the sanitary sewer in accordance with the existing DA. Batch sampling, as defined in the SAP, will be conducted to confirm compliance with the discharge limits. A temporary inlet will be created at the edge of the site to allow for the excavation.

### **4.6 SITE RESTORATION**

The site restoration will include returning the site to a condition similar to those prior to the site cleanup. The site will be backfilled to a level grade similar to the pre-excavation grade. Hydroseeding will be placed on exposed soil to prevent excess erosion and potential runoff. The erosion control measures will be left in place until vegetation has been re-established.

#### **4.6.1 Backfill**

The Exterior Subarea will be backfilled to within 6-inches of the final grade with a non-select material compacted to a non-yielding state. A 6-inch lift of clean topsoil will be placed on the entire site.

The Interior Subarea will be backfilled with a Class B Pit run to the bottom of slab elevation. A 6-inch thick reinforced replacement concrete slab will be doweled into the existing slab.

The geotextile liner and gravel surfacing will be left in place within the CRC Subarea.

#### **4.6.2 Hydroseeding/Landscaping**

Exposed backfill in the Exterior Subarea will be hydroseeded with a residential seed mixture. Planting of ornamental landscaping is not included with this CAP, nor is replacement of concrete walkways.

#### **4.6.3 Reconstruction of Garage**

Reconstruction of the garage will be performed once the hydroseeding is completed. A structure similar to the previous two-car garage will be constructed in the same general area as the former garage. Farallon will consult with the property owner to obtain final approval of the site restoration plans.



## **5.0 COMPLIANCE MONITORING**

The Compliance Monitoring Plan is incorporated with the SAP in Appendix C. The Compliance Monitoring Plan includes the methods and procedures for:

- Performance Monitoring-Confirm during active remediation that the excavation meets the requirements of the cleanup action by removal of all soil with concentrations of one or more of the target pesticides above the selected cleanup level.
- Confirmation Monitoring-Confirm that the Cleanup Action meet the requirements of the Agreed Order by meeting the cleanup levels for soil and perched groundwater in the vadose zone at the defined points of compliance.

Protection monitoring is addressed in the HASP in Appendix D.

### **5.1 COMPLIANCE MONITORING**

Sampling and analysis plan (WAC 173-340-820) and the Compliance Monitoring Plan (WAC 173-340-410) have been combined in the SAP for the cleanup action and included in Appendix C. The SAP provides a detailed description of the specific procedures to ensure the collection, handling, and analysis of sufficient soil and perched groundwater in the vadose zone samples to confirm that the final cleanup action meets the requirements of the Agreed Order.

## **6.0 SCHEDULE**

The proposed schedule for the site cleanup is based on a normal five-day workweek. All work will be performed during daylight hours with a standard 8-hour workday. A contingency of one week has been included in the estimated schedule to compensate for periods when wet weather conditions preclude excavation or exposure of the contaminated subsurface soils at the site.

Based on the preliminary schedule agreed upon with Ecology, the site cleanup is scheduled to begin in late June or early July 2000. All work will be done when the preschool is not in operation. Table 7 provides the proposed project schedule.

### **6.1 PRE-EXCAVATION ACTIVITIES**

Pre-excavation activities will be initiated approximately two weeks in advance of the soil excavation. Approximately 12 days will be required to collect and analyze soil samples from the Category 3 Soils areas. During the period of time necessary to complete the laboratory analysis, the perimeter silt fence will be installed, all the above-ground vegetation and concrete paving will be cleared and removed from the site, the garage will be demolished and the construction debris will be transported off-site and disposed of as non-hazardous solid waste, and the debris piles on-site will be removed. A utilities location will be performed for both the private property and the public utilities that may potentially be affected by the cleanup activities, and existing utility services will be shut-off.

### **6.2 SOIL EXCAVATION AND DISPOSAL**

Soil excavation and disposal activities will require approximately 3 to 4 weeks to complete and will be contingent on attaining confirmational soil samples from the proposed areas of excavation that are below the approved cleanup levels for the site. Adverse weather conditions may have a significant effect on this schedule.

### **6.3 SITE RESTORATION**

Once results of the final confirmation soil samples are received, site restoration activities will be initiated. The backfill and grading of the site will take approximately one week to complete, followed by one day for hydroseeding the site. Reconstruction of the garage will be completed in approximately two weeks.

## **7.0 DOCUMENTATION REQUIREMENTS**

Documentation will be necessary to meet the requirements of the Agreed Order with Ecology. All documentation generated for this cleanup will be submitted directly to Ecology, the PLPs, and their representatives with the weekly reports. Copies will be retained in Farallon files for a minimum of 10 years after completion of the project.

### **7.1 WEEKLY REPORTING**

Daily field reports and field notebooks will be completed by Farallon field personnel for the site cleanup. Copies of all field reports will be kept on-site during the cleanup, with originals retained in Farallon files. Copies of the daily reports will be provided with the weekly summary report.

Weekly reports will be provided during the active remediation of the site and will be discontinued once the site restoration is completed. Weekly reports will be provided to Ecology in the form of a technical memorandum and will include: an update on the cleanup progress and any deviations from the CAP because of changing site conditions, available analytical data from performance and compliance sampling, and available waste manifests as per the EMMP.

### **7.2 QUARTERLY REPORTING**

Quarterly reports will be prepared for the on-going interim actions and once the cleanup has been initiated. Quarterly reports will summarize activities performed during the quarter and planned activities for the following quarter. The quarterly reports will be submitted to Ecology within two weeks after the end of the quarter.

### **7.3 MANIFESTING AND WASTE DISPOSAL TRACKING**

Specific documentation requirements will be met for transportation and disposal of the soil and wastewater generated from the site cleanup. The waste disposal tracking documentation requirements are defined in the EMMP (Appendix A) and are summarized below.

#### **7.3.1 Category 1 and 2 Soils**

The Uniform Hazardous Waste Manifest will be used for the transport and disposal of the Category 1 and 2 Soils, with the description of the waste as being “contaminated soils, not regulated by Washington Dangerous Waste Regulations.” Copies of signed Manifests will be provided to Ecology within 15 calendar days of disposal with the weekly reports.

### **7.3.2 Category 4 Soils**

Category 4 Soils will be manifested with the RCRA Identification Number WAH 000 005 421, that was issued by Ecology for the site on June 16, 1998. The RCRA Identification Number will be used on all annual reports, manifests, and documents that are required by the incineration facility. Copies of the signed manifests will be provided to Ecology within 15 days of disposal with the weekly reports.

## **7.4 FINAL CLOSURE REPORT**

A final closure report will be prepared once there is sufficient data for soil and perched groundwater in the vadose zone to confirm that the cleanup levels at the defined points of compliance have been met and the requirements of the Agreed Order have been completed. The final closure report will be submitted as Final Draft report for Ecology review and comment.

## 8.0 REFERENCES

- Farallon Consulting, L.L.C. December 6, 1999. Remedial Investigation / Feasibility Study, Able Pest Control Site, 62<sup>nd</sup> Avenue Property, 18115 62<sup>nd</sup> Avenue NE, Kenmore, Washington.
- Farallon Consulting LLC. December 15, 1999. Letter to Ms. Louise Bardy, Ecology, Re: Interim Remedial Action Work Plan, Forest Park Preschool, Interim Remedial Action Program, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. December 27, 1999. Letter to Ms. Louise Bardy, Ecology, Re: Addendum No. 1 To Work Plan For Interim Remedial Action, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. January 5, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Summary of Work Completed Interim Remedial Action Addendum No. 1, Excavation and Backfill, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. January 10, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Review of Local Geology and Hydrogeology, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. January 24, 2000. Technical Memorandum to Mr. Byung Maeng, Ecology, Re: Soil Waste Designation, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. February 2, 2000. Technical Memorandum to Ms. Leslie Whiteman, Regional Disposal Company, Re: Soil Waste Disposal, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. February 15, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Results of Exploratory Boring SB-1, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. February 17, 2000. Technical Memorandum to Mr. Byung Maeng and Ms. Louise Bardy, Ecology, Re: Confirmation of Disposal of Category 1 Soil, Rabanco Subtitle D Landfill, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. February 15, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Re-Routing of Roof Drain Lines, Able Pest Control Site, Kenmore, Washington.
- Farallon Consulting LLC. February 28, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Additional Off-Site Sampling, Able Pest Control Site, Kenmore, Washington.

- Farallon Consulting LLC. March 22, 2000. Technical Memorandum to Ms. Louise Bardy, Ecology, Re: Analytical Results, Additional Off-Site Sampling, Able Pest Control Site, Kenmore, Washington.
- Galster, R.W., and Laprade, W.T. 1991. Geology of Seattle, Washington, United States of America, Bulletin of the Association of Engineering Geologists, Volume XXVIII, Number 3, Pages 235-302, August, 1991. Supplement to the Bulletin of the AEG, Plate 1, Geology of Seattle, Washington, USA.
- Hart Crowser. February 3, 1998. Letter to Mr. Scott Missal, Short Crassman & Burgess, Re: Pesticide Document Review and Sample Analysis.
- Klickitat County Solid Waste Department. February 17, 2000. Letter to Mr. Bill Borlaug, P.E. Regional Disposal Company, Re: Pesticide Contaminated Soils, Farallon Consulting.
- Minard, J.P. 1983. Geologic Map of the Edmonds East and Part of the Edmonds West Quadrangles, Washington, US Geological Survey Miscellaneous Field Studies Map MF-1541, 1 sheet, scale 1:24,000.
- Minard, J.P. 1985. Geologic Map of the Bothell Quadrangle, Snohomish and King Counties, Washington, US Geological Survey Miscellaneous Field Studies Map MF-1747, 1 sheet, scale 1:24,000.
- Pacific Groundwater Group (PGG). April 9, 1998. Letter to John Wiegenstein, Heller Wiegenstein P.L.L.C., Re: Soil Sample Results, Former Able Pest Control Site, Ecology I.D. No. N-17-5495-000, 18115-62nd Avenue NE, Bothell, Washington.
- Rabanco Regional Disposal Company. February 16, 2000. Letter to Mr. Tim Hopkinson, Klickitat County Solid Waste Department, Re: Disposal of Soil Containing Pesticides, Roosevelt Regional Landfill.
- Seattle-King County Department of Public Health (SKCDPH). February 16, 1999. Hazard Ranking (updated).
- SECOR International Inc. May 14, 1998. Work Plan for Interim Remedial Action, Able Pest Control Site, 18115 - 62nd Avenue Northeast and 6124 NE 181st Street, Kenmore, Washington
- SECOR International Inc. June 8, 1998. Waste Designation Environmental Media Management Plan, Able Pest Control Site, Kenmore, Washington.
- SECOR International Inc. July 14, 1998. Work Plan Addendum for Interim Remedial Action, Able Pest Control Site, 18115 - 62nd Avenue Northeast and 6124 NE 181st Street, Kenmore, Washington.
- SECOR International Inc. October 28, 1998. One-Time Discharge to Sanitary Sewer Letter.

- SECOR International Inc. January 15, 1999. Monitoring and Maintenance Program Status Report, Interim Remedial Action Program, Able Pest Control Site, Kenmore, Washington.
- SECOR International Inc. January 15, 1999. Interim Remedial Action Report, Able Pest Control Site, 18115 - 62nd Avenue Northeast and 6124 NE 181st Street, Kenmore, Washington.
- TriHydro Northwest. March 11, 1999. Monitoring and Maintenance Program Status Report, Interim Remedial Action Program, Able Pest Control Site, Kenmore, Washington.
- Vaccaro, J.J., et al. 1998. Hydrogeologic Framework of the Puget Sound Aquifer System, Washington and British Columbia, Regional Aquifer System Analysis - Puget-Willamette Lowland, USGS Professional Paper 1424-D, 1998.
- Washington State Department of Ecology. February 19, 1993. Memo to All Hazardous Waste Staff from Tom Eaton, Department of Ecology, Re: Contained-in Policy.
- Washington State Department of Ecology. January 1996. Model Toxics Control Act Cleanup Levels, Chapter 173-340 WAC. Publication #94-06.
- Washington State Department of Ecology. February 1996. Model Toxics Control Act Cleanup Levels and Risk Calculations (CLARC II) Update. Publication #94-145.
- Washington State Department of Ecology. May 14, 1998. Emergency Agreed Order No. DE98TC-N170 issued to Mr. Sheridan Martin and Ms. Sharon Schlittenhard.
- Washington State Department of Ecology. June 9, 1998. Letter to PLPs, Re: Contained-In Determination For Contaminated Soils at the Former Able Pest Control Site Located at 18115 62<sup>nd</sup> Ave Northeast.
- Washington State Department of Ecology. May 14, 1998. Letter to PLPs, Re: Contained-in Determination For Contaminated Soils at Lake Forest Park Preschool Property Located at 6124 NE 181<sup>st</sup>, Kenmore, WA.
- Washington State Department of Health. November 25, 1998. Health Evaluation, Able Pest Control Site, Seattle, King County, Washington (prepared under cooperative agreement with the Agency for Toxic Substance and Disease Registry).
- Washington State Department of Ecology. March 7, 2000. Certified Mail Letter to PLPs, Re: Contaminated Soil Management at the Former Able Pest Control Site, Kenmore, WA.

## **TABLES**



## **FIGURES**

**APPENDIX A**  
**ENVIRONMENTAL MEDIA MANAGEMENT PLAN (EMMP)**  
**FINAL DRAFT CLEANUP ACTION PLAN**  
ABLE PEST CONTROL  
18115 62<sup>ND</sup> AVE NE  
KENMORE, WA.  
FARALLON PN: 602-002

MAY 23, 2000

**APPENDIX B**  
**GRADING PERMIT AND SEPA CHECKLIST**  
**FINAL DRAFT CLEANUP ACTION PLAN**  
ABLE PEST CONTROL  
18115 62<sup>ND</sup> AVE NE  
KENMORE, WA.  
FARALLON PN: 602-002

MAY 23, 2000

**APPENDIX C**  
**SAMPLING AND ANALYSIS PLAN (SAP)**  
**FINAL DRAFT CLEANUP ACTION PLAN**  
ABLE PEST CONTROL  
18115 62<sup>ND</sup> AVE NE  
KENMORE, WA.  
FARALLON PN: 602-002

MAY 23, 2000

**APPENDIX D**  
**HEALTH AND SAFETY PLAN (HASP)**  
**FINAL DRAFT CLEANUP ACTION PLAN**  
ABLE PEST CONTROL  
18115 62<sup>ND</sup> AVE NE  
KENMORE, WA.  
FARALLON PN: 602-002

MAY 23, 2000

**APPENDIX E**  
**QUALITY ASSURANCE PROJECT PLAN**  
**FINAL DRAFT CLEANUP ACTION PLAN**  
ABLE PEST CONTROL  
18115 62<sup>ND</sup> AVE NE  
KENMORE, WA.  
FARALLON PN: 602-002

MAY 23, 2000